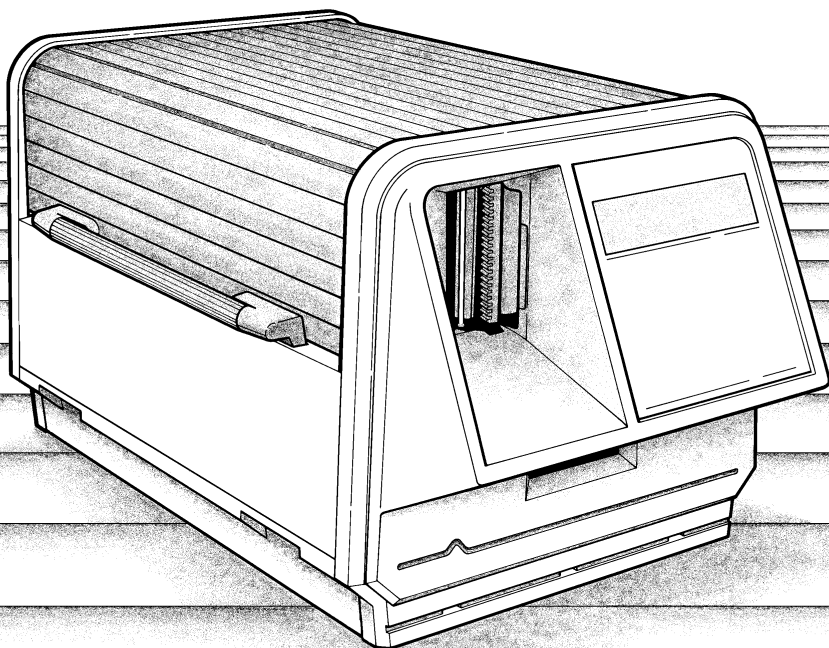


***Monarch 9401®/ 9402®
Thermal Printers***

Equipment Manual



Each product and program carries a respective written warranty, the only warranty on which the customer can rely. Monarch reserves the right to make changes in the product and the programs and their availability at any time and without notice. Although Monarch has made every effort to provide complete and accurate information in this manual, Monarch shall not be liable for any omissions or inaccuracies. Any update will be incorporated in a later edition of this manual.

WARNING

This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.

CANADIAN D.O.C. WARNING

This digital apparatus does not exceed the Class A limits for radio noise emissions from digital apparatus set out in the Radio Interference Regulations of the Canadian Department of Communications.

Le présent appareil numérique n'émet pas de bruits radioélectriques dépassant les limites applicables aux appareils numériques de la classe A prescrites dans le Règlement sur le brouillage radioélectrique édicté par le ministère des Communications du Canada.

WARNING

The power cord is intended to serve as the disconnect device. The socket-outlet shall be near the equipment and shall be easily accessible.

WARNUG

Der Stromversorgungskabel dient als abschaltvorrichtung. Die Steckdose soll in der Nahe der Einheit und leicht zungänglich liegen.

Trademarks

Monarch, 9401 and 9402 are registered trademarks of Monarch Marking Systems, Inc.

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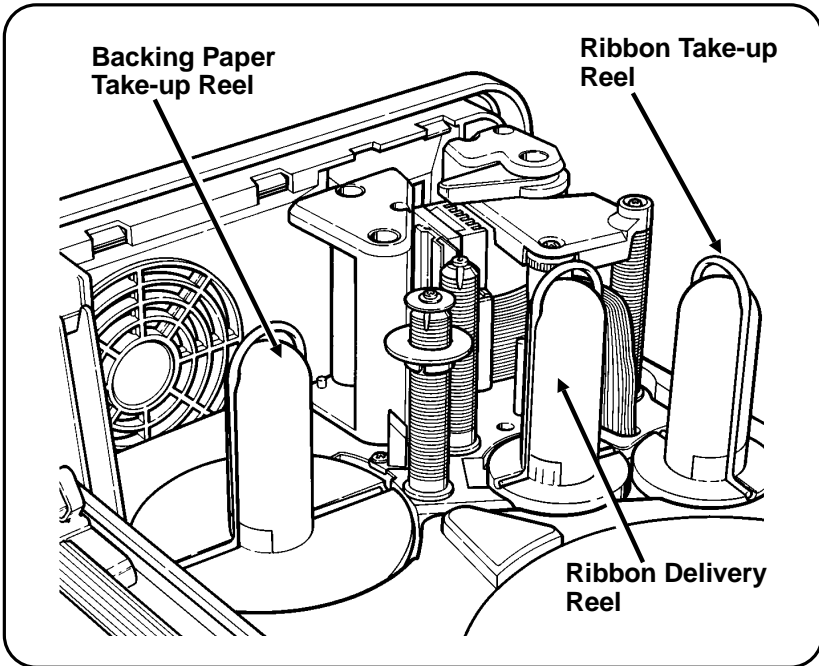
1. Introduction

The 9401® (5-key keypad) and 9402® (21-key keypad) printers are available with a number of options:

- formats 54-69 (9402 only)
- formats 70-85 (9402 only)
- memory card
- memory expansion board
- computer keyboard
- scanner
- battery pack
- ribbon take-up reel
- ribbon delivery spool

To install and use your printer, read all the sections of the manual that apply. If your printer does not have

- take-up reels, skip "Continuous Printing."
- a ribbon delivery spool, skip "Loading the Ribbon."



You should also have these 9401/9402 manuals:

Operator's Handbook

Explains how to enter data and print labels.

System Administrator's Guide

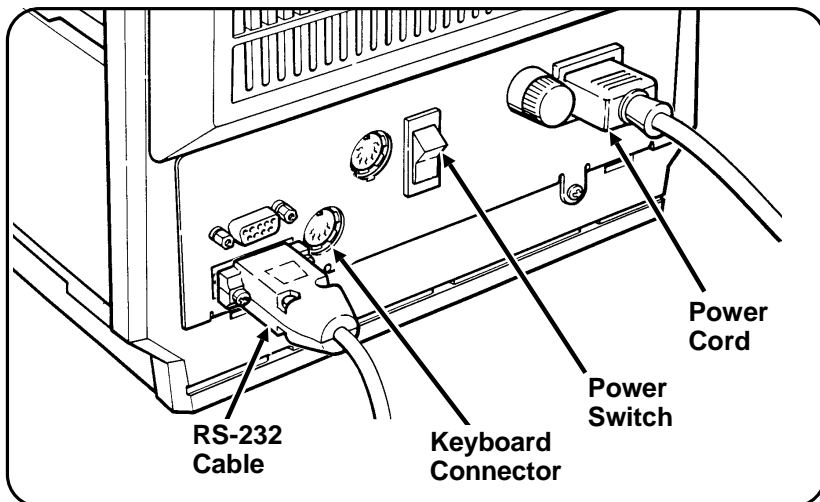
Explains format design, communications, data structures, and how to send formats and batch data on-line.

Messages Manual

Lists off-line and on-line messages and what action you should take (if any).

2. Installing the Printer

1. Place the printer on a level surface.



CAUTION

The power switch must be **Off** while you connect any cables to the printer.

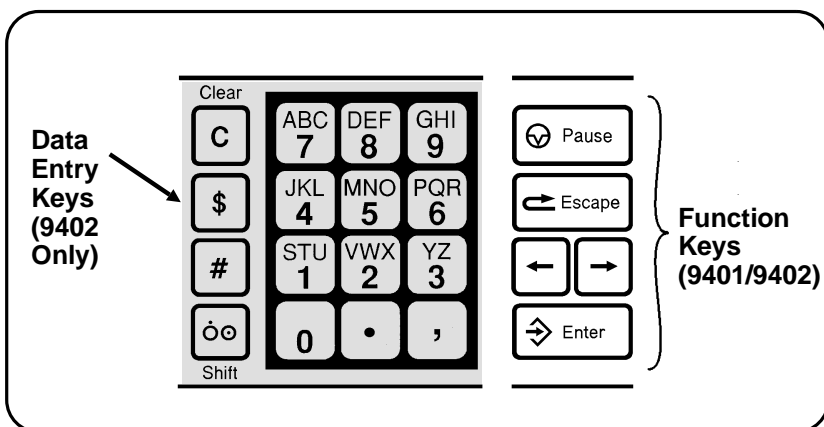
2. If you are going to use the printer on-line, connect the RS-232 (on-line) cable as shown.
3. If you are going to use the optional Monarch computer keyboard, remove the keyboard from its separate shipping carton. Then, remove the plastic cap from the end of the keyboard cable and connect it to the keyboard connector on the printer.

NOTE: The keyboard cable is marked with the word "TOP" to help you connect it to the printer.

4. Connect the power cord to the socket as shown. Plug the other end of the cord into a **grounded** 110VAC electrical outlet.

3. Using the Keys

Both printers have a display (with two 16-character lines) and five function keys. The 9402 printer has 16 additional keys to allow off-line data entry. For information on printing data off-line, refer to the 9401/9402 *Operator's Handbook*.





On the Keypad



Interrupts printing.



Returns the display to the next higher menu
(when you press  once).

Returns the display to the Main menu
(when you press and hold ).



Displays the next menu item.



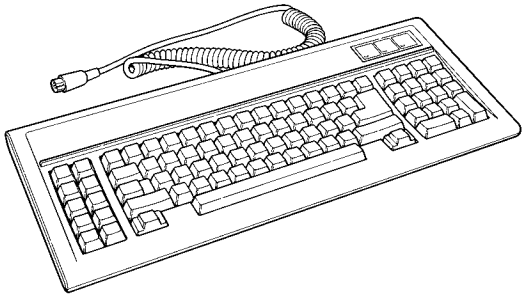
Displays the previous menu item.



Selects the displayed menu item.

On the Computer Keyboard

You can attach an optional computer keyboard to the 9401 or 9402 printers. The computer keyboard looks something like this:



Some of the function keys on a computer keyboard correspond to the function keys on the printer keypad.

Function Key	Printer Keypad Equivalent
F1	
F2	
F5	/ Esc
F6	Enter
F9	
F10	Pause

4. Loading Supplies

The 9401/9402 printers print on

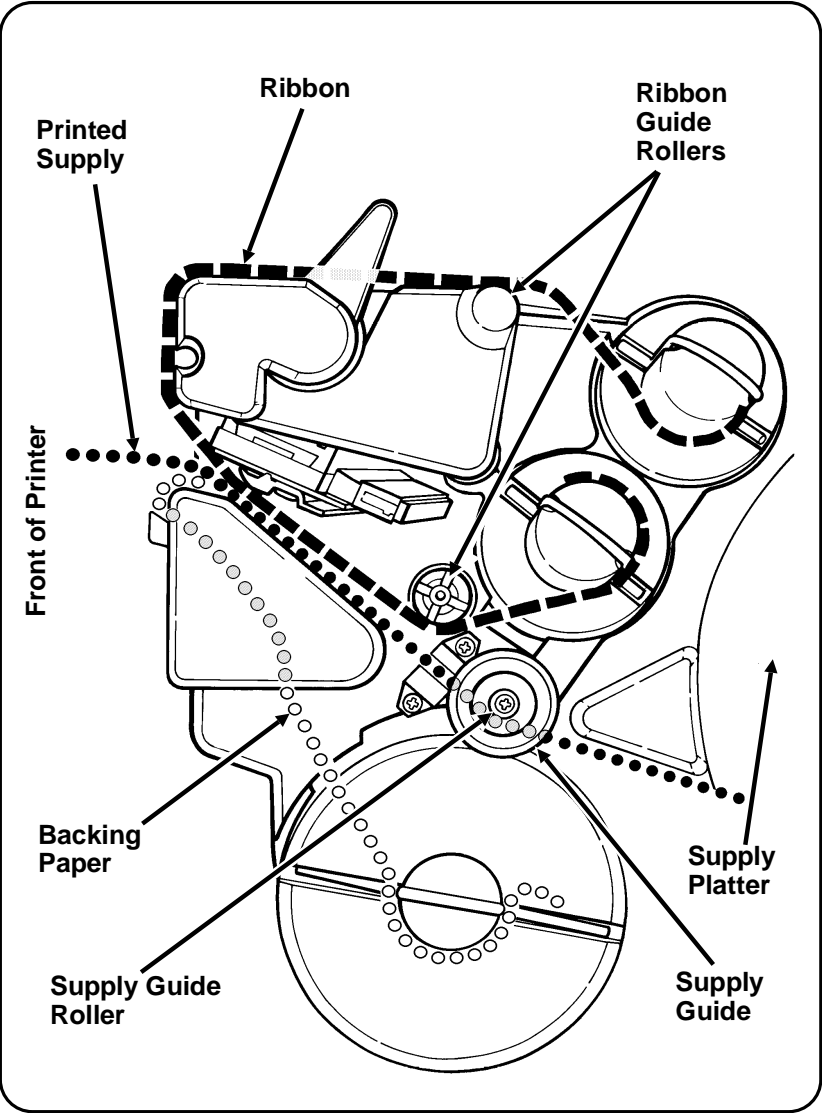
- **Tags**, which can be fed out the exit chute in one strip (see "*Continuous Printing*").
- **Labels**, which can be fed out the exit chute:
 - in one strip (see "*Continuous Printing*").
 - one at a time while the backing paper rewinds inside the printer (see "*On-Demand Printing*").

NOTE: *On-demand printing* is available only on printers equipped with a take-up reel.

Supply Loading Diagram

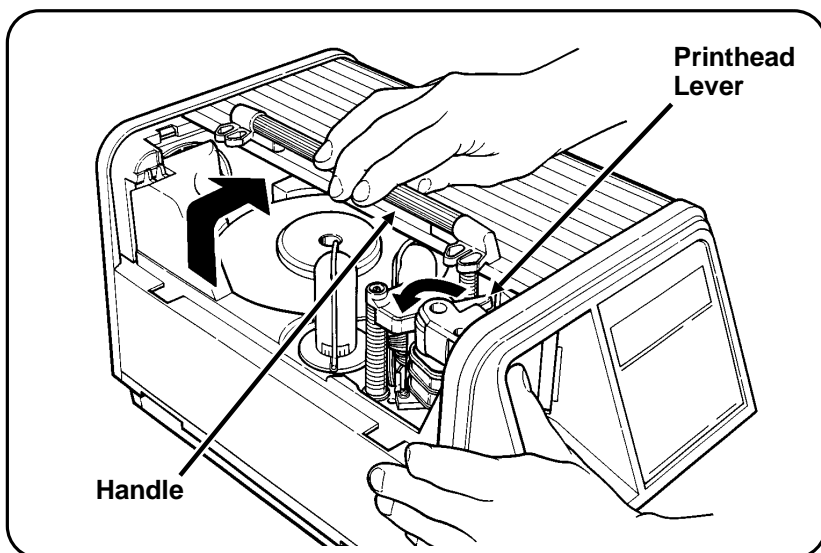
The illustration below shows the correct routing for supplies, ribbon, and backing paper.

NOTE: Guide the ribbon around the ribbon guide rollers when loading.



Continuous Printing

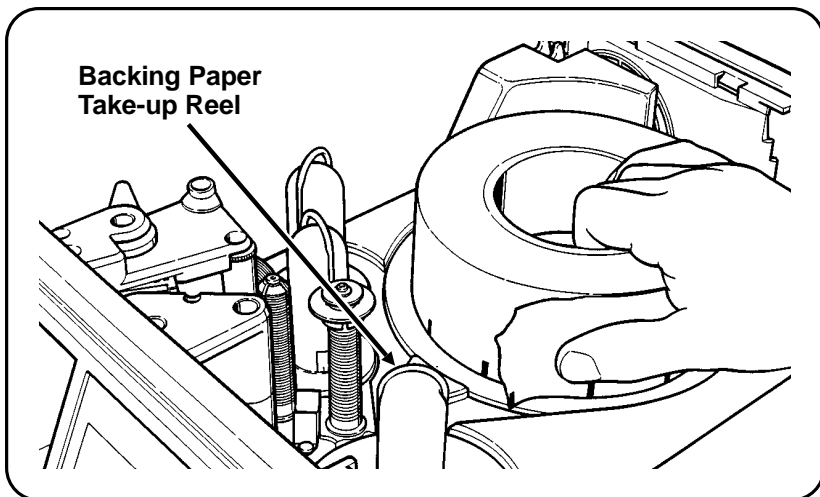
1. Open the printer cover by lifting the handle and pulling it completely around the top of the printer.



2. Move the printhead lever as shown to open the printhead.

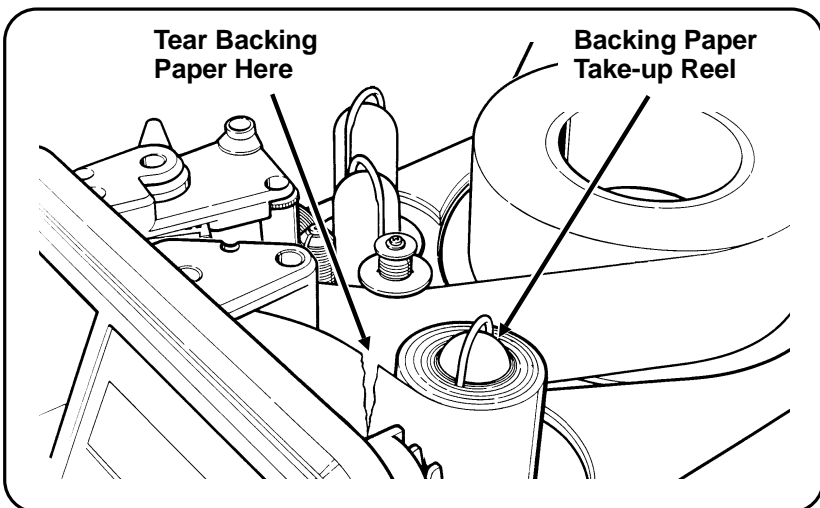
NOTE: If you are loading supplies for the first time, skip steps 3 - 7. If you are replacing supplies, follow all the steps.

3. If backing paper isn't rewound on the backing paper take-up reel, manually rewind and remove the old supply roll.

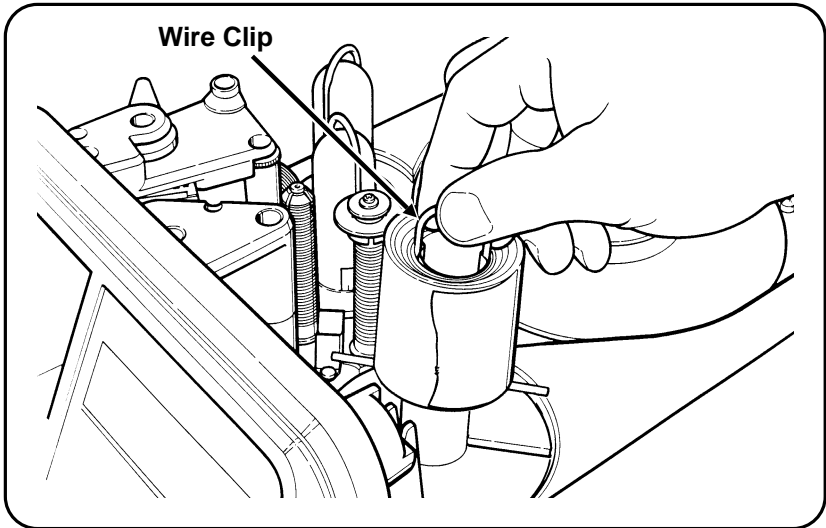


NOTE: Change the ribbon when loading new supplies, if necessary (see "Loading the Ribbon").

4. If the backing paper is rewound on the backing paper take-up reel, loosen the old supplies enough to tear the backing paper where shown. Manually rewind and remove the supply roll.

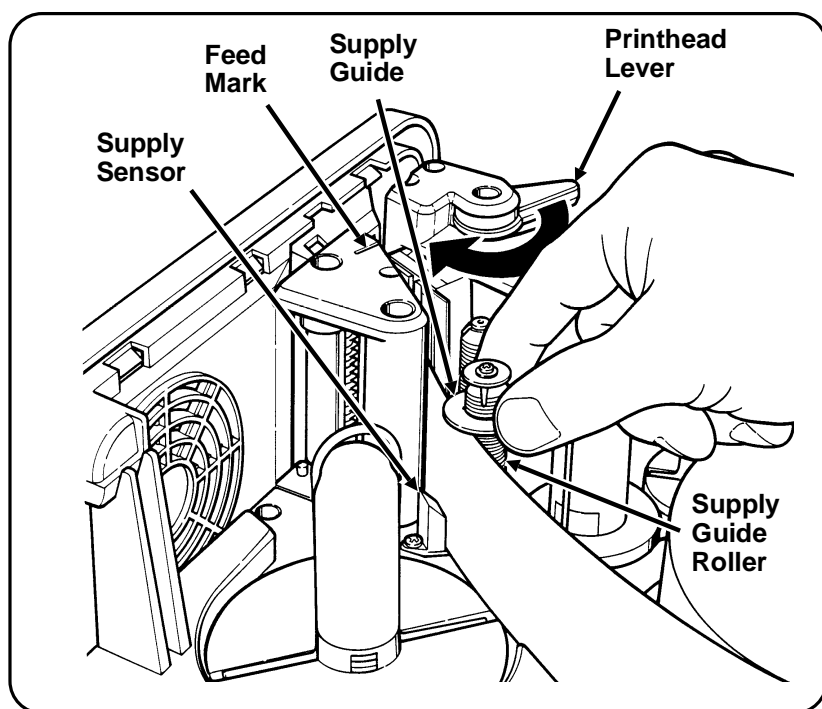


5. Pull the wire clip off the backing paper take-up reel as shown.



6. Slide the backing paper off the wire clip.
7. Replace the wire clip on the backing paper take-up reel.

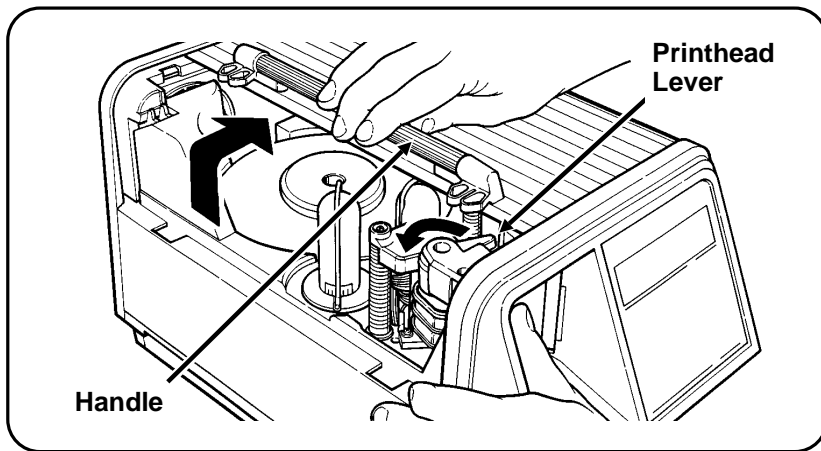
8. Slide the supply guide to the top of the supply guide roller.
9. Remove the seal from the new roll of supplies.
10. Remove the first label from the backing paper.
11. Place the roll of supplies on the supply platter.



12. Feed the supply through the supply sensor, past the printhead, and up to the feed mark (red line).
13. Slide the supply guide down the supply guide roller until it just touches the edge of the supply strip.
14. Close the printhead by turning the printhead lever as shown.
15. Close the printer cover.

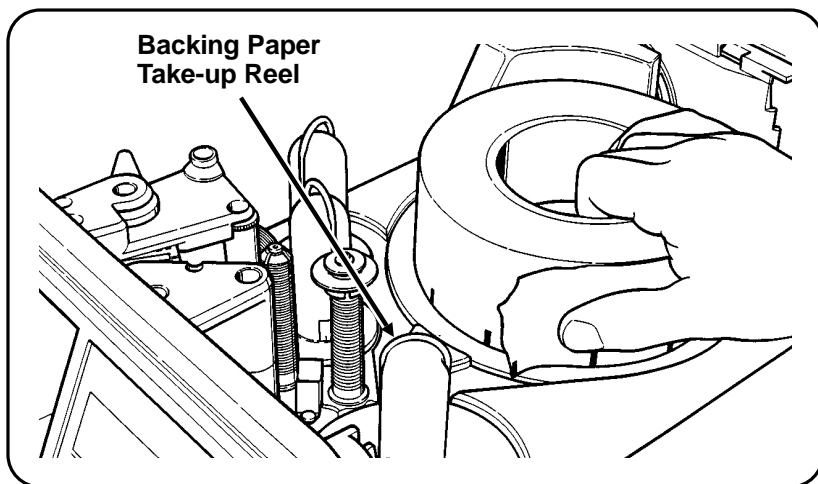
On-Demand Printing

1. Open the printer cover by lifting the handle and pulling it completely around the top of the printer.
2. Move the printhead lever as shown to open the printhead.

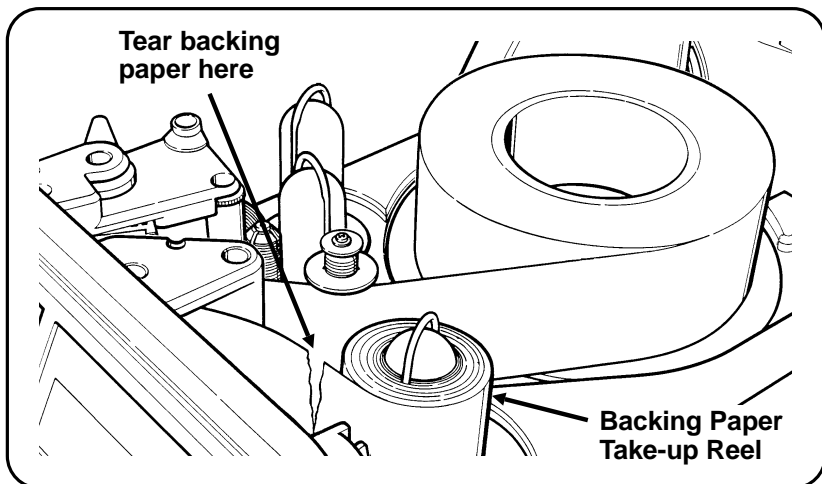


NOTE: If you are loading supplies for the first time, skip steps 3 - 7.

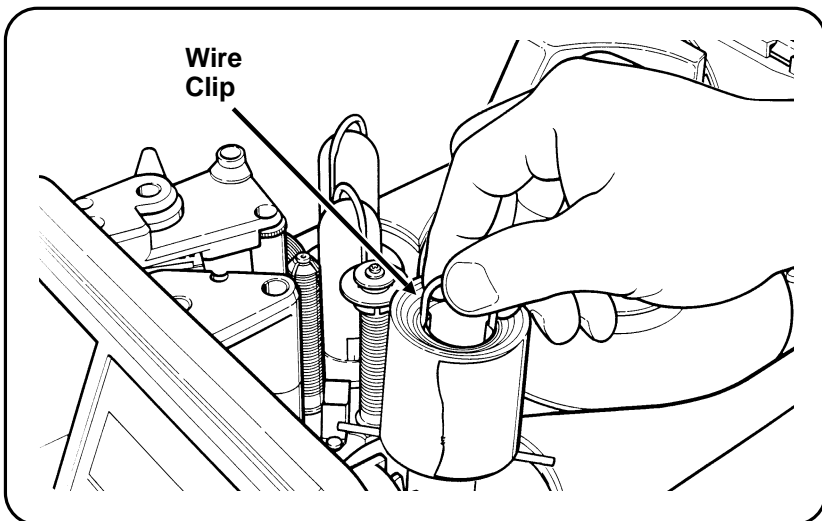
3. If backing paper is not rewound on the backing paper take-up reel, manually rewind and remove the old supply roll.



4. If backing paper is rewound on the backing paper take-up reel, loosen the old supplies enough to tear the backing paper where shown, then manually rewind and remove the supply roll.

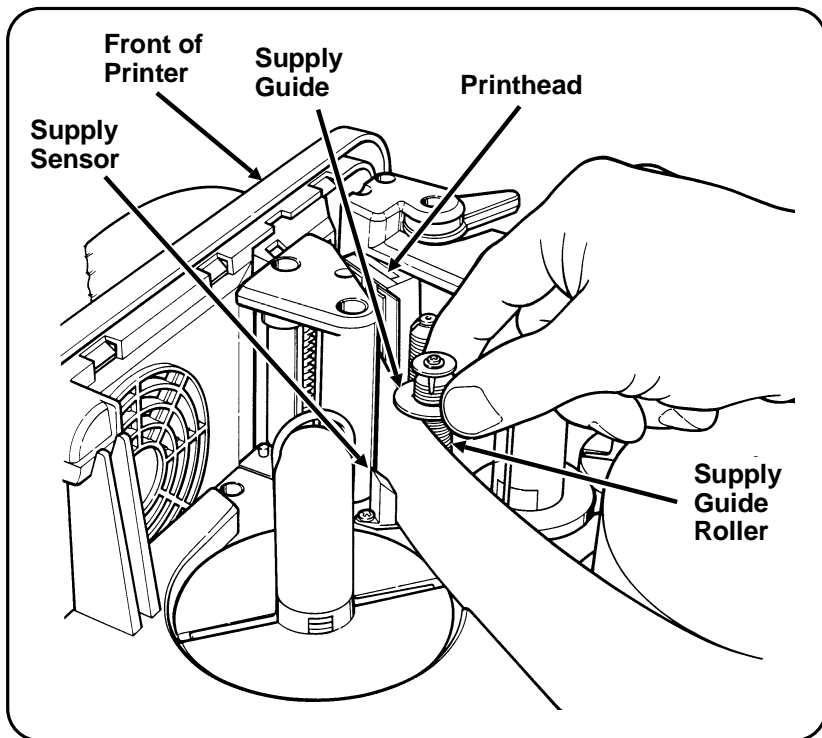


5. Pull the wire clip off the backing paper take-up reel as shown below.



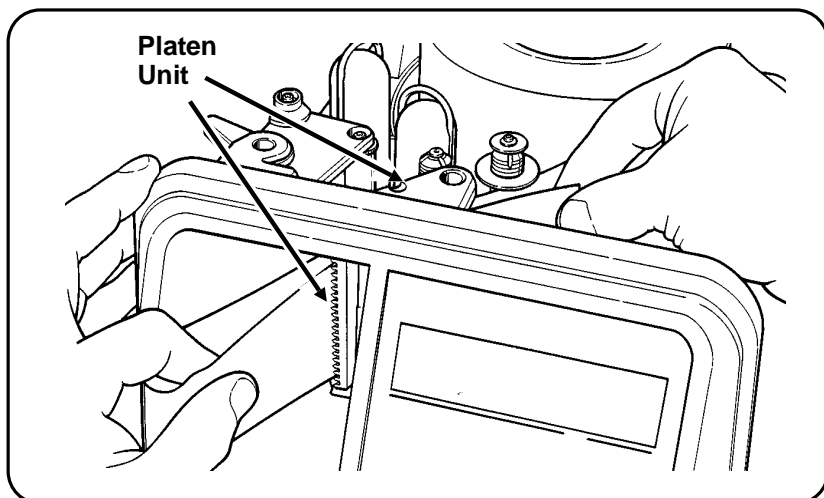
6. Slide the backing paper off the wire clip.
7. Replace the wire clip on the backing paper take-up reel.

8. Slide the supply guide to the top of the supply guide roller.

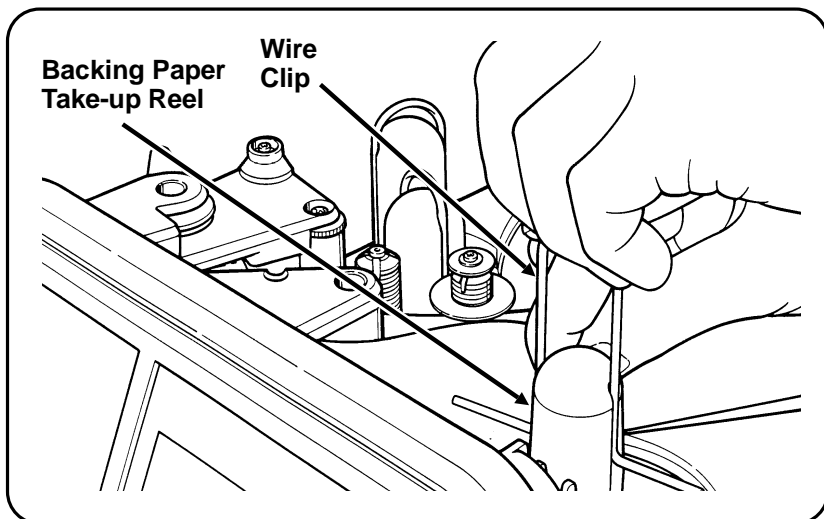


9. Remove the seal from the new supply roll.
10. Remove the first label from the backing paper.
11. Place the supply roll on the supply platter.
12. Feed the supply through the supply sensor, past the printhead, and out the front of the printer.
13. Remove the labels from the first 10 inches (254 mm) of backing paper.

14. Loop the backing paper back through the platen unit as shown.

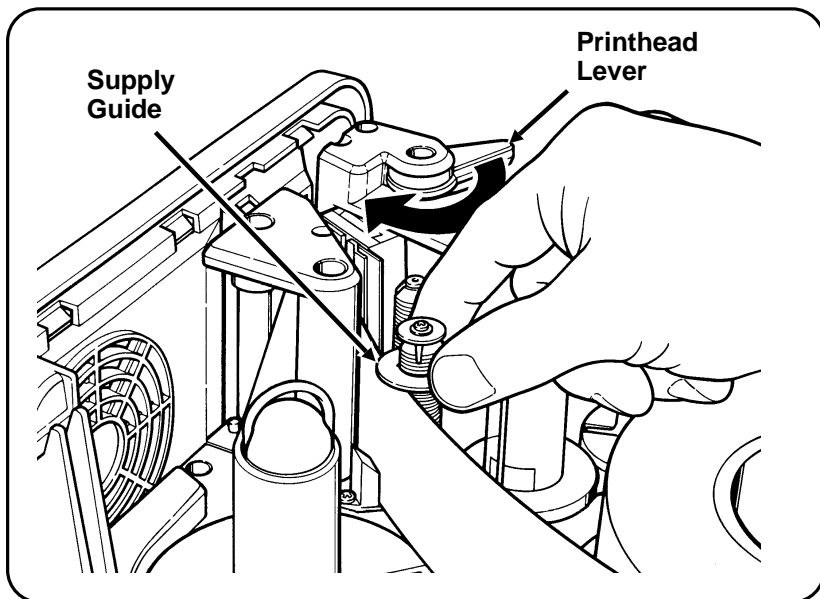


15. Remove the wire clip from the backing paper take-up reel.



16. Wrap the backing paper around the backing paper take-up reel as shown.
17. Slide the wire clip over the backing paper and backing paper take-up reel.

18. Slide the supply guide down the supply guide roller until it just touches the edge of the supply.

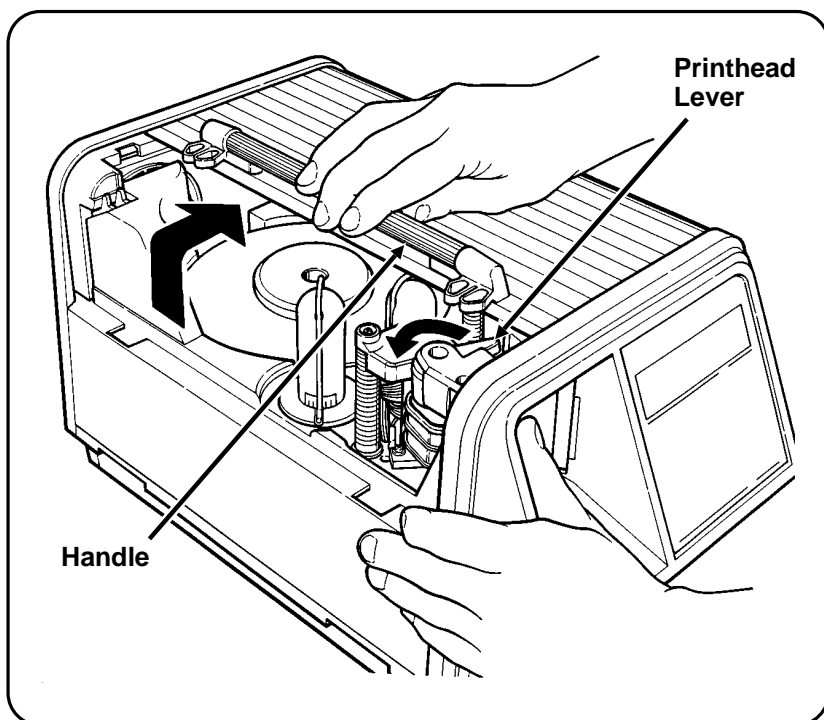


19. Close the printhead by turning the printhead lever as shown.

20. Close the printer cover.

5. Loading the Ribbon

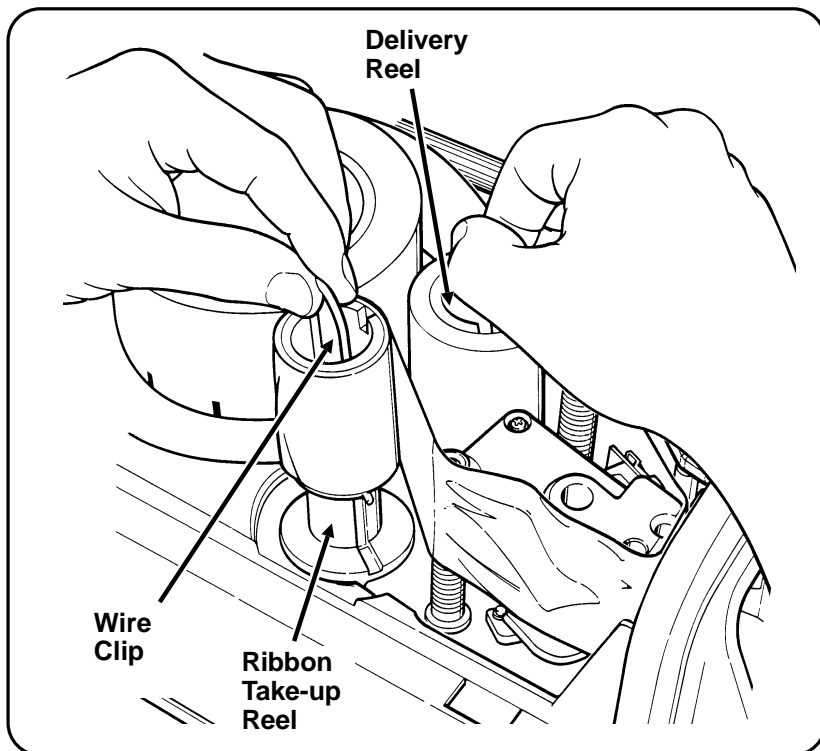
1. Open the cover by lifting the handle and pulling it completely around the top of the printer.
2. Move the printhead lever as shown to open the printhead.



3. Rewind the supplies back onto the roll. If backing paper is rewound on the take-up reel, tear it as described in "Loading Supplies."

NOTE: If you've loaded a ribbon, follow steps 4, 5, and 6. If there is no ribbon, skip to step 7.

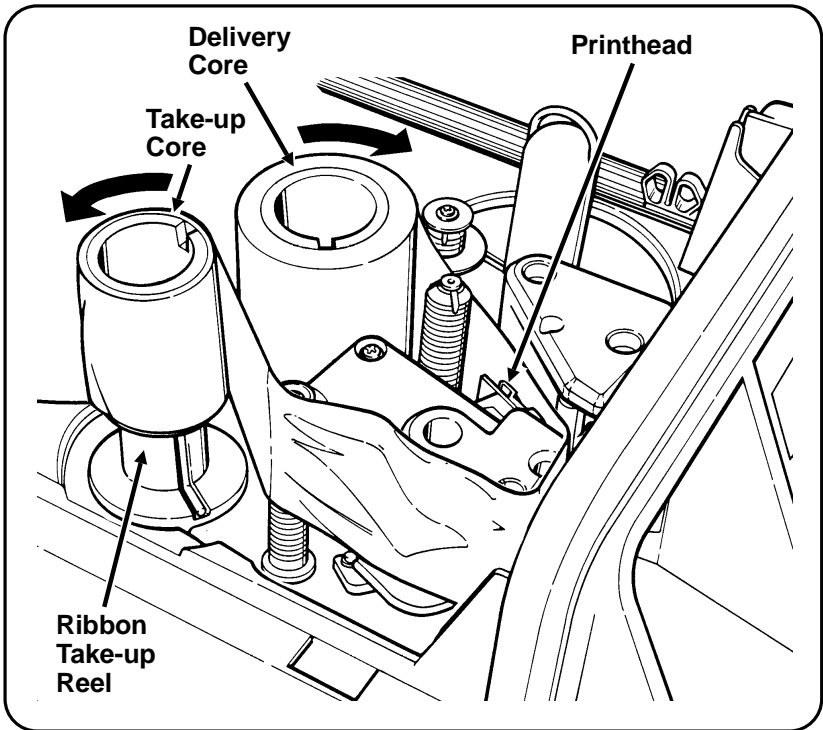
4. Remove the old ribbon by pulling the wire clips as shown.



5. Remove the ribbon cores from the wire clips and discard them.
6. Place the wire clips back on the ribbon take-up reel and delivery reel.
7. Remove the new ribbon from the package.
8. Place the full delivery core on the delivery reel as shown.

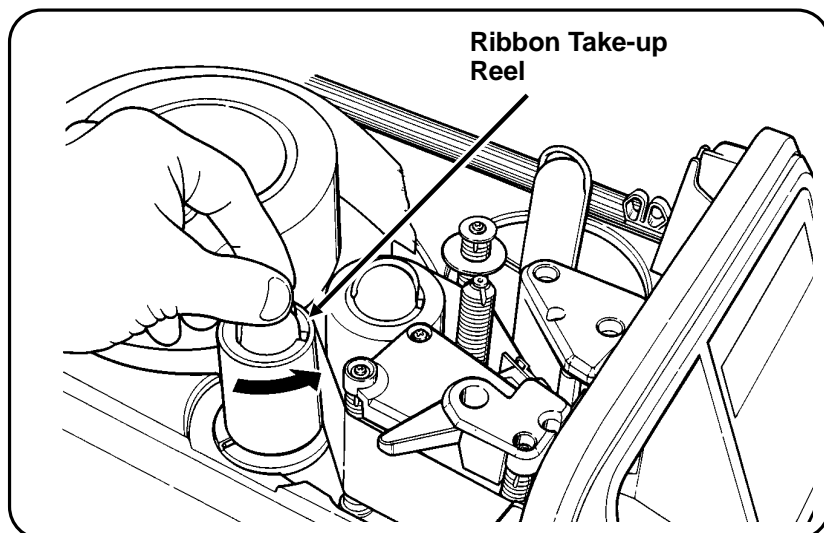
NOTE: The delivery reel feeds the ribbon in a **clockwise** direction. The ribbon take-up reel winds the ribbon in a **counterclockwise** direction.

9. Guide the ribbon down between the printhead and the front of the printer and around the rollers as shown.



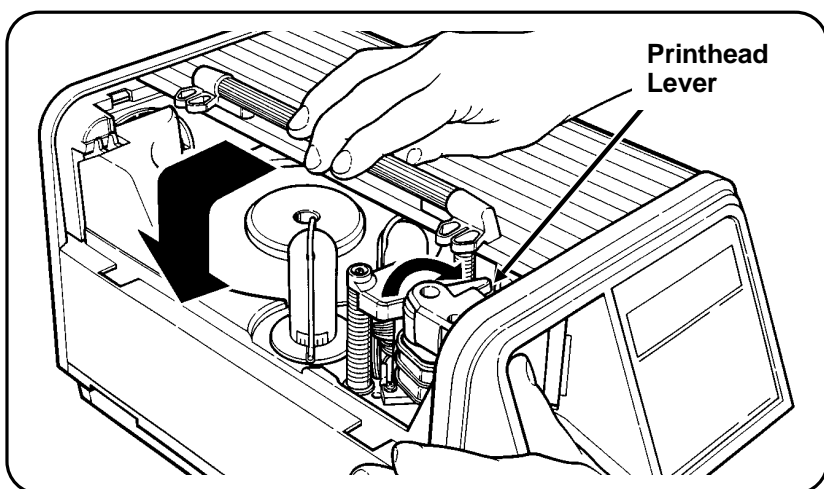
10. Place the take-up core (empty core) on the ribbon take-up reel.
11. Gently slide the ribbon cores onto the reels while guiding the ribbon around the printhead.
12. Press down firmly on the cores to ensure they are seated on the ribbon reel bases.

13. Manually turn the ribbon take-up reel as shown until the ribbon is tight. ***Make sure the ribbon is not wrinkled or bunched.***



14. Slide the supply through the printhead and up to the feed mark, as described in "Loading Supplies."

15. Close the printhead by turning the printhead lever as shown.



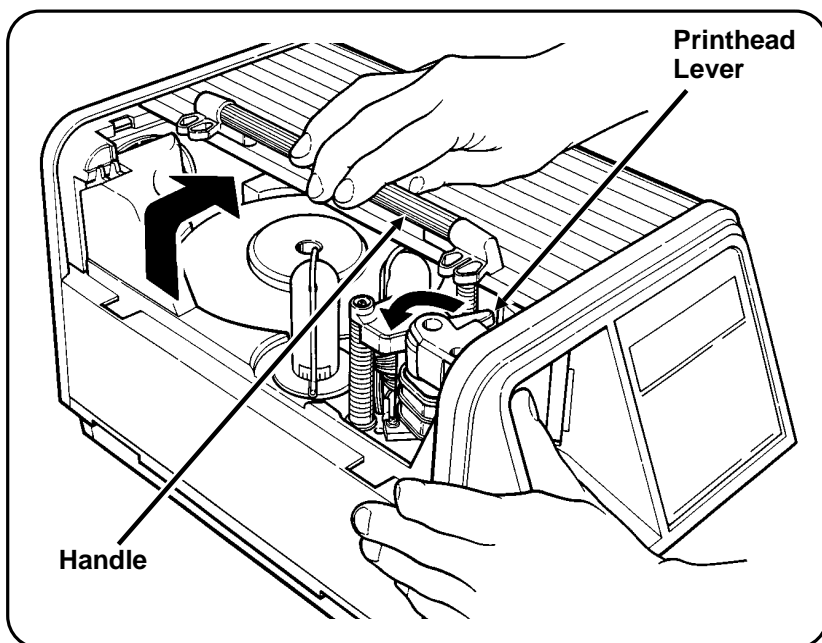
16. Close the printer cover.

6. Cleaning the Printhead and Platen Roller

WARNING

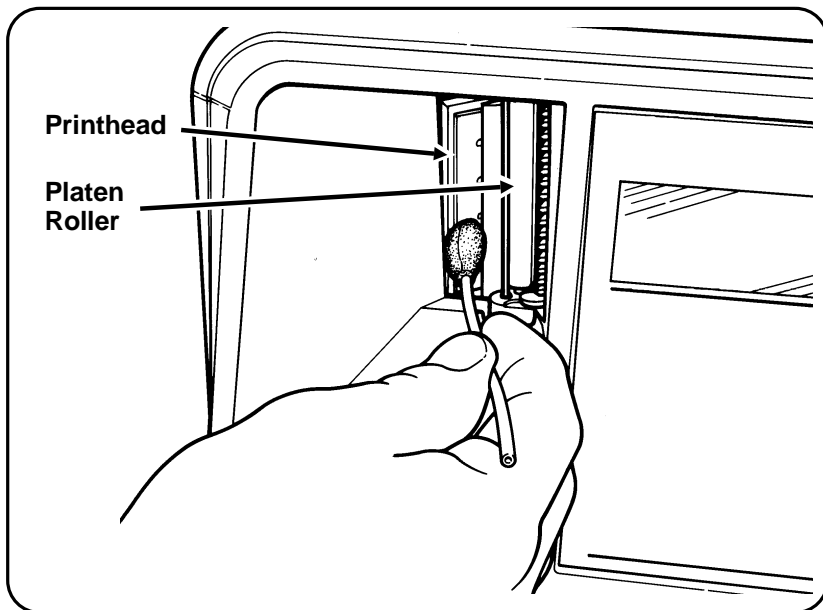
Turn the power **Off** and unplug the cord before cleaning.

1. Open the cover by lifting the handle and pulling it completely around the top of the printer.
2. Move the printhead lever as shown to open the printhead.



3. Wind the supplies back onto the supply roll. If backing paper is rewound on the backing paper take-up reel, tear it as described in "Loading Supplies."
4. Remove the ribbon, if one is loaded. See "Loading the Ribbon" in this manual.

5. Lightly moisten a cotton swab with rubbing alcohol.



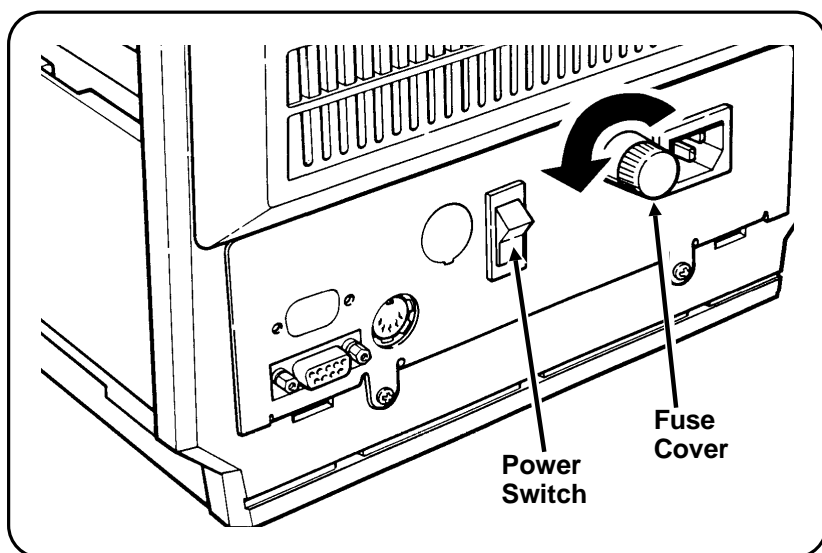
6. Rub the swab up and down the printhead as shown.
Clean the platen roller the same way.
7. Re-load the supply roll and ribbon, if necessary.
8. Close the printhead.
9. Close the printer cover.
10. Turn the power **On**.
11. If printing is not improved, call Service toll free at the number on the back cover of this manual.

7. Replacing the Fuse

CAUTION

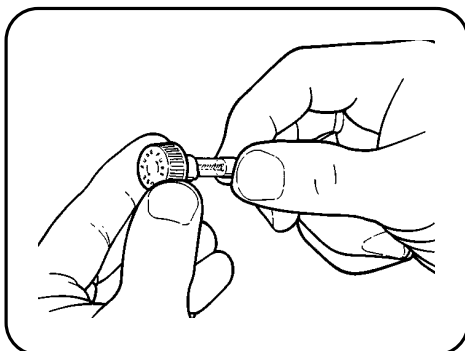
As a safety measure, be sure to turn the printer **Off** and unplug the power cord.

1. Turn the printer **Off** and unplug the power cord.

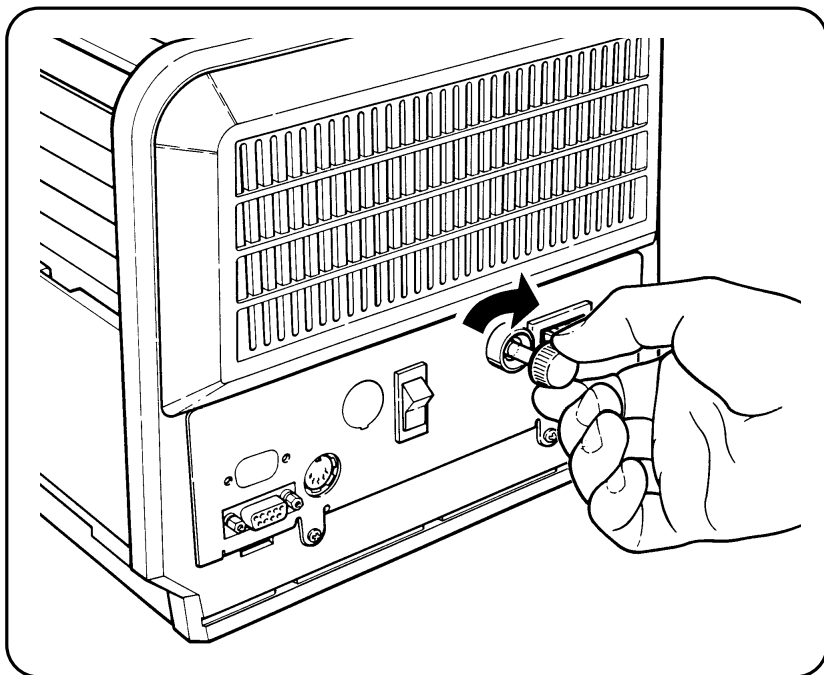


Facing the back of the printer, press and turn the fuse cover as shown until it pops out.

3. Pull the fuse out of the cover.
4. Insert a 1.5 amp, 250V slow blow fuse into the fuse cover and push until the fuse is fully seated.



5. Line up the notches in the fuse cover with the slots in the receptacle and insert the fuse.



6. Push the fuse cover and turn as shown until it locks in place.
7. Plug in the power cord.

8. Troubleshooting

If you have a problem that isn't listed, see the 9401 *Messages Manual* or call Monarch Service.

Problem	Corrective Action
The display is blank after you turn On the printer.	Turn the printer Off and make sure the power cord is properly plugged into the printer and a grounded 110VAC receptacle. Check the fuse and replace it, if necessary (refer to "Replacing the Fuse"). If the problem continues, call Service.
The machine continuously feeds supplies without printing.	Turn the machine Off and check the supply path. Make sure the supply is fed through the supply sensor and the supply guide touches the top edge of the supply.
	Be sure the supply roll is loaded correctly on the supply platter.
Printed data wraps around or is partially lost.	Load the correct supply size.
Printed data becomes misaligned.	Make sure the supplies are loaded correctly.
The printer doesn't print.	If you haven't loaded a ribbon, load one. If you have loaded a ribbon, load it correctly.
	Make sure you have "direct" supplies loaded if you are printing without a ribbon.
	Load the correct supply size.
	Adjust the print position.
	Check the print contrast setting.

Problem	Corrective Action
Printing is compressed or distorted.	Clean the printhead and platen roller.
Printing has shadows or smears.	Clean the printhead.
	Lower the print contrast.
	Change supplies to thermal direct or thermal transfer.
	Reload the ribbon correctly.
Light printing.	Change supplies to thermal direct or thermal transfer.
	Reload the ribbon correctly.
	Raise the print contrast.
Heavy printing.	Clean the printhead.
	Lower the print contrast.
	Change supplies to thermal direct or thermal transfer.
Voids in the printing.	Clean the printhead.
	Clean the platen roller.
	Change supplies to thermal direct or thermal transfer.
	Reload the ribbon correctly.

Problem	Corrective Action
"Check Ribbon" message appears.	Check to see if there is no ribbon or the printer is at the end of the ribbon. In either case, replace the ribbon.
	The ribbon is jammed. Check the ribbon path and reload the ribbon, if necessary.
"Out of Paper" message appears.	Replace the supply roll, if it is empty.
	Make sure the supplies are loaded correctly.
No response from the computer keyboard.	Turn the printer Off . Make sure the keyboard cable is firmly seated in the socket. Turn the printer On .

9. Specifications

Printer

Length:	16.5 inches (419 mm)
Width:	10.5 inches (267 mm)
Height:	9 inches (229 mm)
Weight:	15.5 lbs. (7.05 kg)
Shipping Weight:	22 lbs. (10 kg)
Power:	Domestic: 115 VAC, 80W, .7A, 60 Hz. International: 220 VAC, 80W, .35A, 50 Hz.
Fuse:	1.5 amp, 250V slow blow
Normal operation:	8 hrs. per day, not to exceed 40 hrs. per 7 days
Display:	Liquid crystal display with 2 lines 16 characters per line
Printhead:	Thermal 2 inches wide (51.0 mm / 384 dots) 192 dots/inch (7.5 dots/mm)
Printing method:	Thermal transfer (ribbon) or Thermal direct
Ribbon type:	Black
Temperature:	Operating Thermal Transfer: 40°F to 95°F (4°C to 35°C) Thermal Direct: 40°F to 110°F (4°C to 43°C) Storage 15°F to 120°F (-10°C to 49°C)

Relative humidity:	Operating	10% to 80% (no condensation)
	Storage	5% to 90%
Ribbon widths:	1.26 inches (32.0 mm)	
	1.57 inches (39.88 mm)	
	2.10 inches (53.34 mm)	
Ribbon length:	308.4 feet (94 meters)	
Ribbon storage:	41°F to 95°F (5°C to 35°C). DO NOT leave ribbons in direct sunlight, high temperatures, or high humidity.	
Print speed:	2 inches (51.0 mm) per second	
Print image		
length:	(9401) the first 6 inches of the tag (153 mm)	
	(9402) the first 4 inches of the tag (102.0 mm)	
width:	2 inches	

Supplies

Supply types:	Thermal transfer or thermal direct (tags or labels)	
Width:	Maximum	2.5 inches (63.5 mm)
	Minimum	0.75 inches (19.05 mm)
Length:	Maximum	9 inches (228.6 mm)
	Minimum	0.75 inches (19.05 mm)
Supply thickness:	Maximum	10 mil
	Minimum	6 mil
Roll diameter:	Inside diameter: 3 inches (76.2 mm)	
	Outside diameter: 6.75 inches (171.45 mm)	

For supplies, service, or assistance call:

TOLL FREE:

1-800-543-6650 (In the U.S.A.)

1-800-263-4650 (In Canada)